

UNITED STATES PATENT APPLICATION  
FOR  
**RIGID SPACER FOR GLASS BLOCK WINDOW ASSEMBLIES**

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# **RIGID SPACER FOR GLASS BLOCK WINDOW ASSEMBLIES**

## **BACKGROUND OF THE INVENTION**

### **[0001] 1. Field of the Invention:**

**[0002]** The present invention relates to glass block or translucent block assemblies for use in, for example, decorative wall constructions and windows and buildings. More specifically, the invention relates to a rigid spacer used in the construction of such assemblies.

### **[0003] 2. General Background and State of the Art:**

**[0004]** Glass block and translucent block window assemblies are described, for example, in U.S. Patent Nos. 5,992,111 and 5,687,521. Generally, such assemblies include a plurality of glass blocks placed within a framing assembly. The plurality of glass blocks can be assembled into various shapes, including rectangles, squares and other shapes in standard sizes in order to be placed into openings formed for such windows or walls. The prefabrication of these assemblies makes the actual construction at the jobsites proceed more quickly, as the glass block assemblies are prefabricated prior to delivery to the jobsite.

**[0005]** As shown for example, in the Patent No. 5,992,111, there may be a spacer positioned between the respective glass blocks to aid the assembly. An alternative design for such a spacer is depicted in U.S. Patent No. DES. 402,535, a design which is exemplary of the construction used by one of the manufacturers of glass block windows.

## **INVENTION SUMMARY**

**[0006]** The present invention is directed to a rigid spacer for use in translucent or glass block assemblies to be placed between the adjacent blocks forming the assembly. As described herein, it should be understood that when the phrase glass block is used it could also relate to translucent blocks made of other materials including plastics. The rigid spacer of the present invention has a design which provides structural support within a glass block window assembly and which is contoured to facilitate attachment and securement to the contour of the edges of glass blocks and to provide appropriate surfaces for allowing adherence between the rigid spacer and the adhesives to secure glass blocks.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0007]** Fig. 1 depicts a cross-sectional view of the rigid spacer of the present invention.

**[0008]** Fig. 2 depicts a perspective view of the rigid spacer of Fig. 1.

**[0009]** Fig. 3 depicts a left or right side view of the rigid spacer of Fig. 1.

**[0010]** Fig. 4 depicts a top or bottom side view of the rigid spacer of Fig. 1.

[0011] Fig. 5 depicts the cross-sectional view of the rigid spacer of Fig. 1 positioned between opposing glass blocks.

[0012] Fig. 6 depicts a cross-sectional view of the rigid spacer of Fig. 1 positioned between opposing glass blocks after assembly.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

[0013] Fig. 1 depicts a cross-sectional view of a rigid spacer 10 according to the present invention. The rigid spacer is also depicted in the perspective view of Fig. 2, the left or right side view of Fig. 3 and the top and bottom side view of Fig. 4, wherein like reference numerals will be applied to corresponding features in each figure.

[0014] As best depicted in the cross-sectional view of Fig. 1, the rigid spacer 10 includes mirror image sections 12 and 14. Each of sections 12 and 14 is essentially an elongated hollow teardrop shape joined at the larger end. Each section 12 and 14 includes a plurality of steps or ridges 20 that project outward from central portions of the sections 12 and 14. Pointed projections 22 define the edge of a transition towards the tip or outer edge of the respective sections 12 and 14. The external edges of the respective sections 12 and 14 are closed and have a flattened end portion 30. Near the central portion of the rigid spacer 10, ridges 24 extend slightly outward from the sections 12 and 14. Each section 12 and 14 defines a hollow interior 32 and 34, respectively. The hollow interiors 32 and 34 allow the introduction of support bars which may interact at the edges of the rigid spacers either with other rigid spacers or with the edge of a frame assembly in which the glass blocks are placed.

[0015] Fig. 5 depicts the rigid spacer 10 position between opposing ends of glass blocks 40. The glass blocks 40 have end profiles which are common in the industry. Generally, glass blocks are made by first forming opposing half sections and then fusing the opposing half sections together. In doing so, the half sections have lands 42 which, when fused together edgewise, form a raised profile 44 at the center of all sides of the glass block 40. Moreover, glass blocks 40 generally also include a bulbous end 46 at the edges which recesses backwards towards the lands 42 on the sides.

[0016] The rigid spacer 10 is configured so that the steps or ridges 20 and pointed projections 22 extend towards the lands 42 of the glass blocks 40. Ridges 24 on the rigid spacer 10 project generally towards the raised profile 44 of the glass blocks 40. When the opposing glass blocks 40 are finally assembled as show in Fig. 6, the steps or ridges 20 of the rigid spacer either contact or come into close proximity with the lands 42 of the glass blocks 40. The space between the rigid spacer 10 and the edges of the glass blocks 40 can be left open or can be filled with a silicon or an

epoxy or other appropriate adhesive, cement or grouting material. The flat end portions 30 of the rigid spacer 10 can thus either be exposed edgewise or can be covered by an adhesive or grouting material.

[0017] The configuration of the rigid spacer 10 illustrated in Figs. 5 and 6 is generally proportional to the configuration of 2 inch thick glass blocks 40. Thicker glass blocks, for example a 3 inch glass block, will call for a more elongated rigid spacer which may have additional steps or ridges 20 in the central portions of the respective sections 12 and 14.

[0018] The rigid spacer 10 can be formed of any appropriate material, however, extruded or otherwise formed polyvinyl chloride ("PVC") may be preferred while aluminum or other light weight rigid materials may optionally be used depending on the strength requirements for the assembly.

[0019] The rigid spacer 10 of the present invention provides a plurality of surfaces to trap an adhesive as between the rigid 10 spacer and the glass blocks 40 to increase the adherence between the glass blocks 40 and the rigid spacer 10. The incorporation of the steps or ridges 20, pointed projections 22 and ridges 24 all tend to increase the surface area of the rigid spacer that is available to bond to the silicon, epoxy or other appropriate adhesive, cement or grouting material. In addition, the opposing bulbous teardrop design of the rigid spacer 10 prevents lateral shifting of the glass blocks 40. The design can be altered by, for example, providing one of the sections to be thicker so that a curved glass block construction may be assembled.

[0020] The foregoing description of rigid spacer is intended to define the preferred embodiment and enable construction by those skilled in the art. Additional modifications and configurations utilizing the invention described herein may become apparent upon review of the specification and attached claims. Accordingly, the scope of the present invention is defined by the appended claims.